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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,593	10/30/2003	Hiroyuki Seki	FUJO 20.695 (100794-00490)	1897
26304 7590 10/29/2008 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER CHEN, JUNPENG	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 10/29/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,593	Applicant(s) SEKI ET AL.	
	Examiner JUNPENG CHEN	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-8 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/18/08 & 10/10/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to applicant's amendment/arguments filed on 07/11/2008. Independent claims 1 and 8 have been amended. Claims 1, 4-8 and 11-14 are pending. **This action is made FINAL.**

Response to Arguments

2. Applicant's arguments with respect to amended independent claims 1 and 8 have been considered but are moot in view of the new ground(s) of rejection.

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Regarding independent claims 1 and 8, Applicant argues that the cited portions of Choi “do not include any disclosure or suggestion of distinguishing a selected antenna and an unselected antenna, calculating only a control weight applied to the selected antenna, and fixing the control weight of the unselected antenna to a current value.” The Examiner respectfully disagrees. According to col. 5 with lines 49-55, Choi clearly discloses that at time $t=T+1$, the weight for antenna #1 (reference antenna) is fixed while the weight for antenna #2 is varied. Therefore, there is no calculation involved to determine the weight of the antenna #1 at time $t=T+1$ as its weight is fixed for being a reference antenna. In addition, the calculation performed in col. 5 with line 35-55 is only for the determining/varying the new weight of antenna #2, which the new weight (at time $t=T+1$) is determined by using the phase difference between the vectors 411 and 426. Since the weight for antenna #1 at time $t=T+1$ is fixed, antenna #1 is being read as unselected antenna, and the antenna #2 is being read as the selected antenna because its weight at time $t=T+1$ is varied.

Regarding Applicant's argument that “the claimed invention advantageously provides for feeding back only the transmission weight for a selected part of antennas, and thus, reducing the amount of feedback information for comprehensive control”, the Examiner wants to point out that such feature is not claimed in any of the current claims, therefore, the argument is moot. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “provides for feeding back only the transmission weight for a selected part of antennas” and “reducing the amount of feedback information for

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comprehensive control”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Response to Amendments

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5, 8 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by **Choi et al.** (U.S. Patent 6,754,473 B1).

Consider **claim 1**, Choi discloses a transmitting diversity system with a base station transmitting signals from a plurality of antennas and performing diversity transmission according to feedback data transmitted from a mobile node receiving the signals (read as the closed loop transmit antenna diversity scheme, line 42 of col. 1 to line 11 of col. 2), comprising:

a signal condition detection unit detecting the condition of a signal transmitted from each of the plurality of antennas (read as the terminal estimator that estimates the

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channel environment between the base station and the terminal, lines 55-62 of column 3);

an antenna selection unit selecting an antenna for which a control weight is calculated, from the plurality of antennas; and a control weight unit calculating only the control weight applied to the selected antenna and applying the control weight to signals transmitted from the selected antenna, wherein said control weight unit fixes the control weight of an unselected antenna to a current value (read as at $t=T+1$, the base station maintains a current weight for antenna #1 and assigns a new weight for antenna #2 based on calculation, Figures 1-3, lines 50-55 of column 5).

Consider **claim 5, as applied to claim 1 above**, Choi, as modified by Greenstein, discloses wherein said signal condition detection unit is provided for the mobile node (read as the terminal estimates the channel environment, lines 55-62 of column 3).

Consider **claim 8**, Choi discloses a transmitting diversity method with a base station transmitting signals from a plurality of antennas and performing diversity transmission according to feedback data transmitted from a mobile node receiving the signals (read as the closed loop transmit antenna diversity scheme, line 42 of col. 1 to line 11 of col. 2), comprising the steps of:

detecting the condition of a signal transmitted from each of the plurality of antennas (read as the terminal estimator that estimates the channel environment between the base station and the terminal, lines 55-62 of column 3);

selecting an antenna for which a control weight is calculated, from the plurality of antennas; and calculating only a control weight applied to the selected antenna and applying the control weight to signals transmitted from the selected antenna, wherein in the step of calculating and applying the control weight, the control weight of an unselected antenna is fixed to a current value (read as at $t=T+1$, the base station maintains a current weight for antenna #1 and assigns a new weight for antenna #2 based on calculation, Figures 1-3, lines 50-55 of column 5)..

Consider **claim 12, as applied to claim 8 above**, Choi discloses wherein the detecting step is performed in the mobile node (read as the terminal estimates the channel environment, lines 55-62 of column 3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 6, 11 and 13 are is rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi** et al. (U.S. Patent 6,754,473 B1) in view of **Greenstein** et al. (U.S. Patent 6,131,016).

Consider **claim 4, as applied to claim 1 above**, Choi discloses the claimed invention above but does not specifically discloses wherein said signal condition detection unit measures propagation loss, fading frequency or correlation coefficient between antennas of an incoming signal.

Nonetheless, Greenstein discloses a similar communication method, which comprising an inherently existing detector that detects the path loss characteristics (channel environment information) as fading, Figure 4, lines 45-66 of column 5, lines 8-9 and lines 28-30 of column 6.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Greenstein into Choi, as path loss characteristics is just one of the well known ways that determine the environment condition between the base station and the terminal.

Consider **claim 6, as applied to claim 1 above**, Choi discloses the claimed invention above but does not specifically disclose wherein said signal condition detecting unit is provided for the base station.

Nonetheless, Greenstein further discloses an inherently existing detector that detects the path loss characteristics as fading and the detection (analysis) can be performed in the transmission processing circuitry (base station), Figure 4, lines 45-64 and 66 of column 5.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Greenstein into Choi, as it is just a matter of design choice.

Consider **claim 11, as applied to claim 8 above**, Choi discloses the claimed invention above but does not specifically disclose wherein said signal condition detection unit measures propagation loss, fading frequency or correlation coefficient between antennas of an incoming signal.

Nonetheless, Greenstein discloses a similar communication method, which comprising an inherently existing detector that detects the path loss characteristics (channel environment information) as fading, Figure 4, lines 45-66 of column 5, lines 8-9 and lines 28-30 of column 6.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Greenstein into Choi, as path loss characteristics is just one of the well known ways that determine the environment condition between the base station and the terminal.

Consider **claim 13, as applied to claim 8 above**, Choi discloses the claimed invention above but does not specifically disclose wherein said signal condition detecting unit is provided for the base station.

Nonetheless, Greenstein further discloses an inherently existing detector that detects the path loss characteristics as fading and the detection (analysis) can be performed in the transmission processing circuitry (base station), Figure 4, lines 45-64 and 66 of column 5.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Greenstein into Choi, as it is just a matter of design choice.

Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi et al.** (U.S. Patent 6,754,473 B1).

Consider **claim 7, as applied to claim 1 above**, Choi discloses the processing circuitry within the base station setting weight to maximize the downlink received power for given transmit power, but does not specifically disclose wherein the plurality of antennas are provided for a plurality of base stations, and said antenna selection unit also selects a base station to communicate with by selecting an antenna with a

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controlled weight from the plurality of antennas and making possible a handover process accompanying the travel of each mobile node.

However, the Examiner takes Office Notice that it is well-known that during the process of handover, the involving base stations are communicating with each other through antennas, that the processing circuitry within the base station can set weight to maximize the received power for a given transmit power.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to modify the teachings of Choi to set the weight of the selected antenna that communicate with other base station in order to enhance the operation characteristics of the transmission system.

Consider **claim 14, as applied to claim 8 above**, Choi discloses the processing circuitry within the base station setting weight to maximize the downlink received power for given transmit power, but does not specifically discloses wherein the plurality of antennas are provided for a plurality of base stations, and said antenna selection unit also selects a base station to communicate with by selecting an antenna with a controlled weight from the plurality of antennas and making possible a handover process accompanying the travel of each mobile node.

However, the Examiner takes Office Notice that it is well-known that during the process of handover, the involving base stations are communicating with each other through antennas, that the processing circuitry within the base station can set weight to maximize the received power for a given transmit power.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to modify the teachings of Choi to set the weight of the selected antenna that communicate with other base station in order to enhance the operation characteristics of the transmission system.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any response to this Office Action should be **faxed to** (571) 273-8300 or **mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

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Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junpeng Chen whose telephone number is (571) 270-1112. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)?

Junpeng Chen
J.C./jc

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618